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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,821	03/03/2004	Shingo Nagano	249564US2	1501

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EXAMINER	
NGUYEN, THANH NHAN P	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/790,821	NAGANO ET AL.	
	Examiner	Art Unit	
	(Nancy) Thanh-Nhan P. Nguyen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 03 March 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/3/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu U.S. Patent Application Publication No. 2001/0002146 in view of Fukunishi U.S Patent Application Publication No. 2001/0052889.

Referring to claim 1, Komatsu discloses a liquid crystal display device comprising: an insulating substrate (110); a plurality of pixels formed in the insulating substrate; a pixel electrode (108) formed in at least one pixel of the plurality of pixels, a common electrode (109) formed in at least one pixel of the plurality of pixels and placed across from the pixel electrode; a capacitor electrode (103) connected to the common electrode; a scan line (101) formed substantially parallel to the capacitor electrode; a signal line (102) formed to cross the scan line with an insulating layer (112) therebetween, for supplying a signal to the pixel electrode; a counter substrate (111) placed opposite to the insulating substrate with liquid crystals (130) filled therebetween; wherein the liquid crystal display device displays images by applying an electric field substantially parallel to the insulating substrate between the pixel electrode and the common electrode to align the liquid crystal, [see figs. 1-2, 4; par. 0035].

Komatsu lacks disclosure of a capacitor terminal placed opposite to the capacitor electrode with the insulating layer therebetween to generate capacitance, and connected to the pixel electrode; and the pixel electrode comprises at least two voltage supply paths to the capacitor terminal.

Fukunishi discloses of a capacitor terminal (5a, 33) placed opposite to the capacitor electrode (11a) with the insulating layer therebetween to generate capacitance, and connected to the pixel electrode (7); and the pixel electrode comprises at least two voltage supply paths to the capacitor terminal, [see fig. 4], for the benefit of being capable of an easy correction of a leaking defect and normalization of pixels in the liquid crystal display device, [see par. 0151]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have a capacitor terminal placed opposite to the capacitor electrode with the insulating layer therebetween to generate capacitance, and connected to the pixel electrode; and the pixel electrode comprises at least two voltage supply paths to the capacitor terminal for the benefit of being capable of an easy correction of a leaking defect and normalization of pixels in the liquid crystal display device.

Referring to claim 2, Komatsu discloses a liquid crystal display device further comprising: a gate electrode (105) connected to the scan line (101); a source electrode (106) connected to the signal line (102); and a drain electrode (107) placed opposite to the source electrode and connected to the pixel electrode (108), [see fig. 2].

Komatsu lacks disclosure of the at least two voltage supply paths to the capacitor terminal in the pixel electrode are provided between a connection of the pixel electrode to the drain electrode and a connection of the pixel electrode to the capacitor terminal.

Fukunishi discloses the at least two voltage supply paths to the capacitor terminal in the pixel electrode are provided between a connection of the pixel electrode to the drain electrode and a connection of the pixel electrode to the capacitor terminal, [see fig. 4], for the benefit of being capable of an easy correction of a leaking defect and normalization of pixels in the liquid crystal display device, [see par. 0151]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the at least two voltage supply paths to the capacitor terminal in the pixel electrode are provided between a connection of the pixel electrode to the drain electrode and a connection of the pixel electrode to the capacitor terminal for the benefit of being capable of an easy correction of a leaking defect and normalization of pixels in the liquid crystal display device.

Referring to claims 5-6, Komatsu discloses the capacitor electrode and the capacitor terminal are located approximately in a middle of the pixel in a direction of the signal line, [see fig. 2].

Claims 3-4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu in view of Fukunishi as discussed above, and further in view of Kim et al U.S. Patent Application Publication No. 2004/0263755.

Referring to claim 3, Komatsu lacks disclosure of the pixel electrode and the common electrode are formed in the same conductive layer.

Kim et al discloses the pixel electrode and the common electrode are formed in the same conductive layer (ITO), for the benefit of being able to solve the problem of residual images in the display, [see par. 0079]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the pixel electrode and the common electrode are formed in the same conductive layer for the benefit of being able to solve the problem of residual images in the display.

Still referring to claim 3, Komatsu lacks disclosure of the pixel electrode is connected to the capacitor terminal through at least two contact holes created in the insulating layer above the capacitor terminal.

Fukunishi discloses the pixel electrode (7) is connected to the capacitor terminal (5a, 33) through at least two contact holes (6a, 6d) created in the insulating layer (8) above the capacitor terminal, [see figs. 2, 4], for the benefit of being capable of an easy correction of a leaking defect and normalization of pixels in the liquid crystal display device, [see par. 0151]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the pixel electrode connected to the capacitor terminal through at least two contact holes created in the insulating layer above the capacitor terminal for the benefit of being capable of an easy

correction of a leaking defect and normalization of pixels in the liquid crystal display device.

Claim 4 is met the discussion regarding claims 2, and 3 rejection above.

Claim 7 is met the discussion regarding claims 3, and 5 rejection above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Komatsu U.S. Patent Application Publication No. 2001/0002146 discloses a liquid crystal display device comprising a capacitor electrode connected to the common electrode, and wherein the liquid display device displays images by applying an electric field substantially parallel to the insulating substrate to align the liquid crystal.

Fukunishi U.S Patent Application Publication No. 2001/0052889 discloses a capacitor terminal placed opposite to the capacitor electrode with the insulating layer therebetween to generate capacitance, and connected to the pixel electrode; and the pixel electrode comprises at least two voltage supply paths to the capacitor terminal.

Kim et al U.S. Patent Application Publication No. 2004/0263755 discloses the pixel electrode and the common electrode are formed in the same conductive layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on M-F/9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 27, 2005
TN

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